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RubberWorld

The technical service magazine for the rubber industry

Volume 196, No. 4

July 1987

Annual Machinery & Equipment Issue

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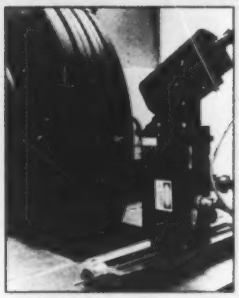

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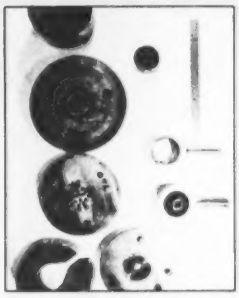

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by Jon Menough, contributing technical service editor. This month's column looks at a line of thickness measuring devices based on gamma backscatter, developed by NDC Systems of Monrovia, CA, for use on calendered products.

10 Quality Management: Computerized gage control systems

by Paul Hertzler, Paul Hertzler & Co. This column presents an analysis of computer systems for controlling gages, as a prerequisite to statistical process control.

14 Urethane Forum: New solvent recovery technology helps meet EPA emissions mandate

by A.J. Ehrler, The Celicote Co. A solvent recovery process system is presented. Used in combination with the radically-advanced "Sol-Vol-X" absorbent, it is said to meet objectives in terms of providing a cost-effective, flexible and completely automatic alternative to other volatile organic compound (VOC) removal technologies.

16 Technological benefits through process control

by K. Guenther Heiss, Werner & Pfleiderer Corp. This article provides a perspective on the successful operation of rubber injection molding. The discussion includes the process itself, equipment, control systems and development areas.

20 Processing melt processible rubbers

by W. Robert Abell, III, E.I. du Pont de Nemours & Co. The author discusses the ways in which MPR combines the performance properties of mid-performance rubbers with a processing latitude that is said to be unmatched by other rubbers.

25 Non-contact laser triangulation for tire industry automation process control

by Stephen F. Turco, Selective Electronics, Inc. The extrusion of tire treads, and other critical areas, is becoming a science based on the positive use of automation control, as described in this article.

29 Molding technology and a computer program for molding simulations

by Henry S.-Y. Hsich and R.J. Ambrose, Lord Corp. The authors have developed a computer program for molding simulations through the applications of rheology and cure kinetics to elastomer molding operations.

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Business Briefs

Acquisitions, expansions

Continental AG, Hanover, West Germany will buy the **General Tire** subsidiary from **GenCorp** for $650 million. General Tire also announced that recently completed capital improvements programs have increased radial passenger tire production at its Charlotte, NC plant 24% daily, an 11% increase at the Mt. Vernon, IL plant and a 15% increase at its Mayfield, KY plant.

Dunlop Tire will spend $21.1 million to modernize its Sheridan Drive tire plant in Tonawanda, NY increasing daily capacity 67%.

The Steelastic Co., Akron, OH signed letters of intent to purchase the **Tire Equipment Inc.** and **Salisbury** machine subsidiaries of Goodyear.

Goodyear's subsidiary **Long Mile Rubber** will build a plant to produce single-piece, injection-molded treads for commercial truck tires at an undetermined site, but with production scheduled to begin in 1988. Goodyear plans to have its $15 million radial aircraft tire facility in operation by early 1988 at its Danville, VA facility.

Polysar has begun production of powdered nitrile rubber at a new unit added to its Polysar France complex in Strasbourg.

SCM Chemicals is expanding its Bunbury titanium dioxide operations from 40,000 tons per year to 77,000 tons, at a cost of more than $150 million (Australian).

Witco Corp. acquired **U. S. Emulsifiers,** Memphis, TN for approximately $5.3 million.

The Fluorocarbon Co., Laguna Nigel, CA acquired **Eaton Corp.'s** polymer products division and renamed the Aurora, OH operation **The Samuel Moore Group.**

Allied Fibers is expanding industrial polyester fiber capacity at its Moncure, NC facility by 25%.

Ashland Chemical signed a letter of intent to purchase **Southern Petrochemical, Inc.,** a privately held Atlanta-based distributor of bulk thermoplastic resins.

Imperial Adhesives, Cincinnati, OH acquired the assets of **Audal, Inc.**

Dowty Group, PLC agreed to acquire **Woodville Polymer Engineering Ltd.**(U.K.), whose technology includes polymer engineering, insulation foams and coated and fabricated products.

Glenro, Inc., Patterson, NJ has started a new convection oven division.

M.A. Hanna Co. purchased **Allied Color Industries,** Broadview Heights, OH a manufacturer of colorants.

Arco Chemical acquired the exclusive worldwide rights to the methyl methacrylate (MMA) technology of the **Halcon SD Group.**

Polyvinyl Chemicals has established a Canadian subsidiary for sales and distribution of its acrylic and urethane

RMA tire report through March
(figures in thousands of units)

Passenger tires	YTD '87	YTD '86	%change
Shipments			
original equipment	15,048	14,589	3.15
radial	12,739	12,233	4.14
replacement	32,093	30,739	4.40
radial	28,455	26,341	8.03
export	1,285	1,034	24.27
radial	1,106	785	40.89
total	48,426	46,362	4.45
radial	42,300	39,359	7.47
Production	42,614	40,988	3.97
radial	36,882	34,448	7.07
Truck & bus tires			
Shipments			
original equipment	1,946	1,766	10.19
radial	1,371	1,166	17.58
replacement	7,465	6,904	8.13
radial	3,874	3,184	21.67
export	447	338	32.25
radial	317	203	56.16
total	9,858	9,008	9.44
radial	5,562	4,553	22.16
Production	8,590	8,251	4.11
radial	4,600	3,925	17.20

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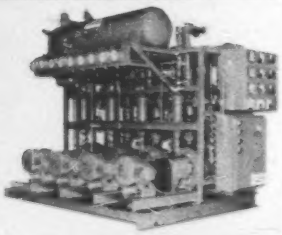

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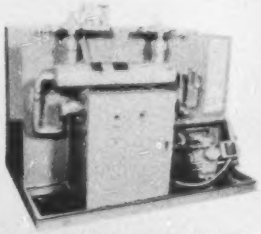

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special-purpose polymers.

Contracts, licenses

Acushnet Co. plans to open a manufacturing and distribution subsidiary in Thailand as part of a joint venture with **Minor Holding Ltd.**. A 10,000 sq. ft. complete rubber processing facility will be built near Bangkok.

The Dutch chemical group **DSM** and **Idemitsu Petrochemical** of Japan are examining joint ventures for EPDM rubber for the Far East and polycarbonate for Europe. For EPDM, the two companies are considering constructing a 30,000 ton plant, based on DSM technology, in Japan, to be commissioned in 1990. For polycarbonate, a 25,000 ton plant, based on Idemitsu technology, would be constructed in Europe with a 1990 start-up as well.

MKB Industries, Stratford, CT is the U.S. marketing and engineering distributor for **Iddon Brothers LTD,** Leyland, England, manufacturers of computer managed extrusion equipment.

The M.F. Cachat Co., Cleveland, OH is now a distributor of **New Jersey Zinc**(zinc oxide and zinc dust), **NJZ Colors**(chrome yellow and moly orange), **SCM Chemicals**(titanium dioxide) and **Occidental Chemical**(chlorinated paraffins).

Neochem, Akron, OH has been appointed by **Peter Heard and Associates** as a sales representative for its polymers and chemicals.

Summit Chemical, Akron is now a distributor for **Akzo Chemie**.

T.K. Fielders Co. appointed **U.S. Extrusion** as its exclusive North American representative for its blending plants and mixers.

Eastman Kodak issued a license to **Sunkyong Fibres**, Seoul, South Korea to manufacture dimethyl terephthalate(DMT) and terephthalic acid(TPA) using Eastman technology.

RMA rubber report through March
(figures in metric tons)

	Cumulative 1987	Cumulative 1986	%
Total new rubber			
New rubber available	855,142	792,594	7.89
Imports	297,001	288,847	2.82
Exports	120,147	90,895	32.18
Apparent consumption	728,206	685,391	6.25
Total natural rubber			
Imports	226,662	218,073	3.94
Exports	9,429	10,289	-8.36
Apparent consumption	216,502	202,529	6.90
%total new rubber	29.73	29.54	
Total synthetic rubber			
Production	558,141	503,747	10.80
Imports	70,339	70,774	-.61
Exports	110,718	80,606	37.36
Apparent consumption	511,703	482,861	5.97
Total SBR			
Production	216,090	192,045	12.52
Imports	20,977	29,308	-28.43
Exports	44,201	21,445	106.11
Apparent consumption	196,516	196,463	.03
Total nitrile			
Production	18,070	15,033	20.20
Imports	3,310	2,856	15.90
Exports	2,906	2,509	15.82
Apparent consumption	16,478	15,843	4.01
Polybutadiene			
Production	94,796	93,547	1.34
Imports	23,114	13,926	65.98
Exports	15,467	5,964	163.76
Apparent consumption	100,425	90,610	10.83
Ethylene-propylene			
Production	66,005	55,560	18.78
Imports	1,544	1,003	53.94
Exports	11,724	11,334	3.44
Apparent consumption	51,912	48,185	7.73
Butyl, polychloroprene, polyisoprene, silicone and other synthetic elastomers			
Production	163,179	147,553	10.59
Imports	21,394	23,681	-9.65
Exports	36,420	39,454	-7.69
Apparent consumption	146,372	131,760	11.09

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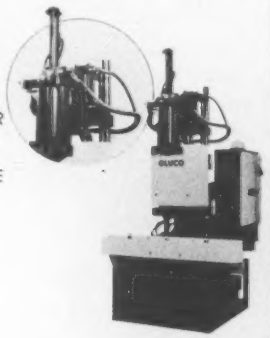

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